

ABSTRACT

The present invention relates to a bovine beta-casein gene targeting vector comprising (1) a first region having a length of 5 to 12 kb which is homologous to the promoter and its flanking nucleic acid sequences of bovine beta-casein gene, and comprising exon 1, intron 1, and exon 2 of bovine beta-casein gene; (2) a region for cloning a nucleic acid coding for desired proteins; (3) a region for coding a positive selection marker; (4) a second region having a length of 2.8 to 3.5 kb which is homologous to the nucleic acid sequences of bovine beta-casein gene, and comprising exon 5, 6, 7 and 8, and intron 5, 6 and 7 of bovine beta-casein gene; wherein the nucleic acid segment corresponding to the first region is located upstream to the nucleic acid segment corresponding to the second region in the 5'-3' arrangement of beta-casein gene. The present invention also relates to method producing the transgenic cattle which is bovine beta-casein gene-targeted with a gene coding a desired protein using the said vector and obtaining a large scale of a desired protein from the milk of the said transgenic cattle.